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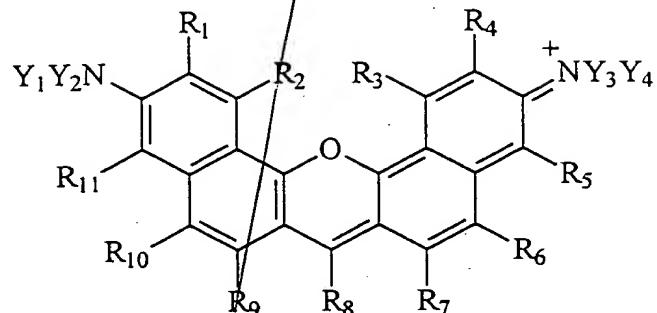
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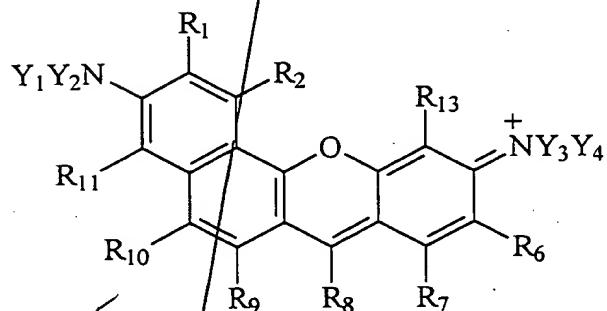
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WE CLAIM:

1. An extended rhodamine compound having the structure



or,



wherein

R<sub>1</sub> taken alone is selected from the group consisting of -H, alkyl, alkyl independently substituted with one or more Z<sub>1</sub>, heteroalkyl, heteroalkyl independently substituted with one or more Z<sub>1</sub>, aryl, aryl independently substituted with one or more Z<sub>1</sub>, heteroaryl, heteroaryl independently substituted with one or more Z<sub>1</sub>, arylalkyl, arylalkyl independently substituted with one or more Z<sub>1</sub>, heteroarylalkyl, heteroarylalkyl independently substituted with one or more Z<sub>1</sub>, halogen, -OS(O)<sub>2</sub>OR, -S(O)<sub>2</sub>OR, -S(O)<sub>2</sub>R, -S(O)<sub>2</sub>NR, -S(O)R, -OP(O)O<sub>2</sub>RR, -P(O)O<sub>2</sub>RR, -C(O)OR, -NRR, -NRRR, -NC(O)R, -C(O)R, -C(O)NRR, -CN, and -OR, wherein R is independently selected from the group consisting of -H, alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or, R<sub>1</sub> taken together with R<sub>2</sub>, Y<sub>1</sub>, or Y<sub>2</sub> is selected from the group consisting of alkylene, alkylene independently substituted with one or more Z<sub>1</sub>, heteroalkylene, heteroalkylene independently substituted with one or more Z<sub>1</sub>, arylene, arylene independently substituted with one or more Z<sub>1</sub>, heteroarylene, and heteroarylene independently substituted with one or more Z<sub>1</sub>;

R<sub>2</sub> taken alone is selected from the group consisting of -H, alkyl, alkyl independently substituted with one or more Z<sub>1</sub>, heteroalkyl, heteroalkyl independently substituted with one or more Z<sub>1</sub>, aryl, aryl independently substituted with one or more Z<sub>1</sub>, heteroaryl, heteroaryl independently substituted with one or more Z<sub>1</sub>, arylalkyl, arylalkyl independently substituted with one or more Z<sub>1</sub>, heteroarylalkyl, heteroarylalkyl independently substituted with one or more Z<sub>1</sub>, halogen, -OS(O)<sub>2</sub>OR, -S(O)<sub>2</sub>OR, -S(O)<sub>2</sub>R, -S(O)<sub>2</sub>NR, -S(O)R, -OP(O)O<sub>2</sub>RR, -P(O)O<sub>2</sub>RR, -C(O)OR, -NRR, -NRRR, -NC(O)R, -C(O)R, -C(O)NRR, -CN, and -OR, wherein R is independently selected from the group consisting of -H, alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or, R<sub>2</sub> taken together with R<sub>1</sub> is selected from the group consisting of alkylene, alkylene independently substituted with one or more Z<sub>1</sub>, heteroalkylene, heteroalkylene independently substituted with one or more Z<sub>1</sub>, aryleno, aryleno independently substituted with one or more Z<sub>1</sub>, heteroaryleno, and heteroaryleno independently substituted with one or more Z<sub>1</sub>;

R<sub>3</sub> taken alone is selected from the group consisting of -H, alkyl, alkyl independently substituted with one or more Z<sub>1</sub>, heteroalkyl, heteroalkyl independently substituted with one or more Z<sub>1</sub>, aryl, aryl independently substituted with one or more Z<sub>1</sub>, heteroaryl, heteroaryl independently substituted with one or more Z<sub>1</sub>, arylalkyl, arylalkyl independently substituted with one or more Z<sub>1</sub>, heteroarylalkyl, heteroarylalkyl independently substituted with one or more Z<sub>1</sub>, halogen, -OS(O)<sub>2</sub>OR, -S(O)<sub>2</sub>OR, -S(O)<sub>2</sub>R, -S(O)<sub>2</sub>NR, -S(O)R, -OP(O)O<sub>2</sub>RR, -P(O)O<sub>2</sub>RR, -C(O)OR, -NRR, -NRRR, -NC(O)R, -C(O)R, -C(O)NRR, -CN, and -OR, wherein R is independently selected from the group consisting of -H, alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or, R<sub>3</sub> taken together with R<sub>4</sub> is selected from the group consisting of alkylene, alkylene independently substituted with one or more Z<sub>1</sub>, heteroalkylene, heteroalkylene independently substituted with one or more Z<sub>1</sub>, aryleno, aryleno independently substituted with one or more Z<sub>1</sub>, heteroaryleno, and heteroaryleno independently substituted with one or more Z<sub>1</sub>;

R<sub>4</sub> taken alone is selected from the group consisting of -H, alkyl, alkyl independently substituted with one or more Z<sub>1</sub>, heteroalkyl, heteroalkyl independently substituted with one or more Z<sub>1</sub>, aryl, aryl independently substituted with one or more Z<sub>1</sub>, heteroaryl, heteroaryl independently substituted with one or more Z<sub>1</sub>, arylalkyl, arylalkyl independently substituted with one or more Z<sub>1</sub>, heteroarylalkyl, heteroarylalkyl independently substituted with one or more Z<sub>1</sub>, halogen, -OS(O)<sub>2</sub>OR, -S(O)<sub>2</sub>OR, -S(O)<sub>2</sub>R, -S(O)<sub>2</sub>NR, -S(O)R, -OP(O)O<sub>2</sub>RR, -

P(O)O<sub>2</sub>RR, -C(O)OR, -NRR, -NRRR, -NC(O)R, -C(O)R, -C(O)NRR, -CN, and -OR, wherein R is independently selected from the group consisting of -H, alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or, R<sub>4</sub> taken together with R<sub>3</sub>, Y<sub>3</sub>, or Y<sub>4</sub> is selected from the group consisting of alkylene, alkylene independently substituted with 5 one or more Z<sub>1</sub>, heteroalkylene, heteroalkylene independently substituted with one or more Z<sub>1</sub>, arylene, arylene independently substituted with one or more Z<sub>1</sub>, heteroarylene, and heteroarylene independently substituted with one or more Z<sub>1</sub>;

R<sub>5</sub> taken alone is selected from the group consisting of -H, alkyl, alkyl independently substituted with one or more Z<sub>1</sub>, heteroalkyl, heteroalkyl independently substituted with one or 10 more Z<sub>1</sub>, aryl, aryl independently substituted with one or more Z<sub>1</sub>, heteroaryl, heteroaryl independently substituted with one or more Z<sub>1</sub>, arylalkyl, arylalkyl independently substituted with one or more Z<sub>1</sub>, heteroarylalkyl, heteroarylalkyl independently substituted with one or more Z<sub>1</sub>, halogen, -OS(O)<sub>2</sub>OR, -S(O)<sub>2</sub>OR, -S(O)<sub>2</sub>R, -S(O)<sub>2</sub>NR, -S(O)R, -OP(O)O<sub>2</sub>RR, -P(O)O<sub>2</sub>RR, -C(O)OR, -NRR, -NRRR, -NC(O)R, -C(O)R, -C(O)NRR, -CN, and -OR, wherein 15 R is independently selected from the group consisting of -H, alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or, R<sub>5</sub> taken together with R<sub>6</sub>, Y<sub>3</sub>, or Y<sub>4</sub> is selected from the group consisting of alkylene, alkylene independently substituted with one or more Z<sub>1</sub>, heteroalkylene, heteroalkylene independently substituted with one or more Z<sub>1</sub>, arylene, arylene independently substituted with one or more Z<sub>1</sub>, heteroarylene, and 20 heteroarylene independently substituted with one or more Z<sub>1</sub>;

R<sub>6</sub> taken alone is selected from the group consisting of -H, alkyl, alkyl independently substituted with one or more Z<sub>1</sub>, heteroalkyl, heteroalkyl independently substituted with one or more Z<sub>1</sub>, aryl, aryl independently substituted with one or more Z<sub>1</sub>, heteroaryl, heteroaryl independently substituted with one or more Z<sub>1</sub>, arylalkyl, arylalkyl independently substituted with one or more Z<sub>1</sub>, heteroarylalkyl, heteroarylalkyl independently substituted with one or more Z<sub>1</sub>, halogen, -OS(O)<sub>2</sub>OR, -S(O)<sub>2</sub>OR, -S(O)<sub>2</sub>R, -S(O)<sub>2</sub>NR, -S(O)R, -OP(O)O<sub>2</sub>RR, -P(O)O<sub>2</sub>RR, -C(O)OR, -NRR, -NRRR, -NC(O)R, -C(O)R, -C(O)NRR, -CN, and -OR, wherein 25 R is independently selected from the group consisting of -H, alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or, R<sub>6</sub> taken together with R<sub>5</sub>, R<sub>7</sub>, Y<sub>3</sub>, or Y<sub>4</sub> is selected from the group consisting of alkylene, alkylene independently substituted with one or 30 more Z<sub>1</sub>, heteroalkylene, heteroalkylene independently substituted with one or

more  $Z_1$ , aryleno, aryleno independently substituted with one or more  $Z_1$ , heteroaryleno, and heteroaryleno independently substituted with one or more  $Z_1$ ;

R<sub>7</sub> taken alone is selected from the group consisting of -H, alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, heteroarylalkyl independently substituted with one or more  $Z_1$ , halogen, -OS(O)<sub>2</sub>OR, -S(O)<sub>2</sub>OR, -S(O)<sub>2</sub>R, -S(O)<sub>2</sub>NR, -S(O)R, -OP(O)O<sub>2</sub>RR, -P(O)O<sub>2</sub>RR, -C(O)OR, -NRR, -NRRR, -NC(O)R, -C(O)R, -C(O)NRR, -CN, and -OR, wherein R<sub>10</sub> is independently selected from the group consisting of -H, alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or, R<sub>7</sub> taken together with R<sub>6</sub> is selected from the group consisting of alkyleno, alkyleno independently substituted with one or more  $Z_1$ , heteroalkyleno, heteroalkyleno independently substituted with one or more  $Z_1$ , aryleno, aryleno independently substituted with one or more  $Z_1$ , heteroaryleno, and heteroaryleno independently substituted with one or more  $Z_1$ ;

R<sub>8</sub> is selected from the group consisting of -H, alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, heteroarylalkyl independently substituted with one or more  $Z_1$ ;

R<sub>9</sub> taken alone is selected from the group consisting of -H, alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, heteroarylalkyl independently substituted with one or more  $Z_1$ , halogen, -OS(O)<sub>2</sub>OR, -S(O)<sub>2</sub>OR, -S(O)<sub>2</sub>R, -S(O)<sub>2</sub>NR, -S(O)R, -OP(O)O<sub>2</sub>RR, -P(O)O<sub>2</sub>RR, -C(O)OR, -NRR, -NRRR, -NC(O)R, -C(O)R, -C(O)NRR, -CN, and -OR, wherein R is independently selected from the group consisting of -H, alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or, R<sub>9</sub> taken together with R<sub>10</sub> is selected from the group consisting of alkyleno, alkyleno independently substituted with one or more  $Z_1$ , heteroalkyleno, heteroalkyleno independently substituted with one or more  $Z_1$ ,

aryleno, aryleno independently substituted with one or more  $Z_1$ , heteroaryleno, and heteroaryleno independently substituted with one or more  $Z_1$ ;

R<sub>10</sub> taken alone is selected from the group consisting of -H, alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, heteroarylalkyl independently substituted with one or more  $Z_1$ , halogen, -OS(O)<sub>2</sub>OR, -S(O)<sub>2</sub>OR, -S(O)<sub>2</sub>R, -S(O)<sub>2</sub>NR, -S(O)R, -OP(O)O<sub>2</sub>RR, -P(O)O<sub>2</sub>RR, -C(O)OR, -NRR, -NRRR, -NC(O)R, -C(O)R, -C(O)NRR, -CN, and -OR, wherein R is independently selected from the group consisting of -H, alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or, R<sub>10</sub> taken together with R, or R<sub>11</sub> is selected from the group consisting of alkylene, alkylene independently substituted with one or more  $Z_1$ , heteroalkylene, heteroalkylene independently substituted with one or more  $Z_1$ , aryleno, aryleno independently substituted with one or more  $Z_1$ , heteroaryleno, and heteroaryleno independently substituted with one or more  $Z_1$ ;

R<sub>11</sub> taken alone is selected from the group consisting of -H, alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, heteroarylalkyl independently substituted with one or more  $Z_1$ , halogen, -OS(O)<sub>2</sub>OR, -S(O)<sub>2</sub>OR, -S(O)<sub>2</sub>R, -S(O)<sub>2</sub>NR, -S(O)R, -OP(O)O<sub>2</sub>RR, -P(O)O<sub>2</sub>RR, -C(O)OR, -NRR, -NRRR, -NC(O)R, -C(O)R, -C(O)NRR, -CN, and -OR, wherein R is independently selected from the group consisting of -H, alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or, R<sub>11</sub> taken together with R<sub>10</sub>, Y<sub>1</sub> or Y<sub>2</sub> is selected from the group consisting of alkylene, alkylene independently substituted with one or more  $Z_1$ , heteroalkylene, heteroalkylene independently substituted with one or more  $Z_1$ , aryleno, aryleno independently substituted with one or more  $Z_1$ , heteroaryleno, and heteroaryleno independently substituted with one or more  $Z_1$ ;

R<sub>13</sub> taken alone is selected from the group consisting of -H, alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl

- independently substituted with one or more  $Z_1$ , heteroarylalkyl, heteroarylalkyl independently substituted with one or more  $Z_1$ , halogen,  $-OS(O)_2OR$ ,  $-S(O)_2OR$ ,  $-S(O)_2R$ ,  $-S(O)_2NR$ ,  $-S(O)R$ ,  $-OP(O)O_2RR$ ,  $-P(O)O_2RR$ ,  $-C(O)OR$ ,  $-NRR$ ,  $-NRRR$ ,  $-NC(O)R$ ,  $-C(O)R$ ,  $-C(O)NRR$ ,  $-CN$ , and  $-OR$ , wherein R is independently selected from the group consisting of  $-H$ , alkyl,  
5 heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or,  $R_{13}$  taken together with  $Y_3$  or  $Y_4$  is selected from the group consisting of alkylene, alkylene independently substituted with one or more  $Z_1$ , heteroalkylene, heteroalkylene independently substituted with one or more  $Z_1$ , aryleno, aryleno independently substituted with one or more  $Z_1$ , heteroaryleno, and heteroaryleno independently substituted with one or more  $Z_1$ ;
- 10  $Y_1$  taken alone is selected from the group consisting of  $-H$ , alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, and heteroarylalkyl independently substituted with one or  
15 more  $Z_1$ , or  $Y_1$  taken together with  $R_1$ ,  $R_{11}$  or  $Y_2$  is selected from the group consisting of alkylene, alkylene independently substituted with one or more  $Z_1$ , heteroalkylene, heteroalkylene independently substituted with one or more  $Z_1$ , aryleno, aryleno independently substituted with one or more  $Z_1$ , heteroaryleno, and heteroaryleno independently substituted with one or more  $Z_1$ ;  
20  $Y_2$  taken alone is selected from the group consisting of  $-H$ , alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, and heteroarylalkyl independently substituted with one or  
25 more  $Z_1$ , or  $Y_2$  taken together with  $R_1$ ,  $R_{11}$  or  $Y_1$  is selected from the group consisting of alkylene, alkylene independently substituted with one or more  $Z_1$ , heteroalkylene, heteroalkylene independently substituted with one or more  $Z_1$ , aryleno, aryleno independently substituted with one or more  $Z_1$ , heteroaryleno, and heteroaryleno independently substituted with one or more  $Z_1$ ;  
30  $Y_3$  taken alone is selected from the group consisting of  $-H$ , alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl

independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, and heteroarylalkyl independently substituted with one or more  $Z_1$ , or  $Y_3$  taken together with  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_{13}$  or  $Y_4$  is selected from the group consisting of alkylene, alkylene independently substituted with one or more  $Z_1$ , heteroalkylene,

- 5 heteroalkylene independently substituted with one or more  $Z_1$ , aryleno, aryleno independently substituted with one or more  $Z_1$ , heteroaryleno, and heteroaryleno independently substituted with one or more  $Z_1$ ;

$Y_4$  is absent, or  $Y_4$  taken alone is selected from the group consisting of -H, alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, and heteroarylalkyl independently substituted with one or more  $Z_1$ , or  $Y_4$  taken together with  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_{13}$  or  $Y_3$  is selected from the group consisting of alkylene, alkylene independently substituted with one or more  $Z_1$ , heteroalkylene, heteroalkylene independently substituted with one or more  $Z_1$ , aryleno, aryleno independently substituted with one or more  $Z_1$ , heteroaryleno, and heteroaryleno independently substituted with one or more  $Z_1$ ; and

$Z_1$  is selected from the group consisting of, -R, halogen, -OS(O)<sub>2</sub>OR, -S(O)<sub>2</sub>OR, -S(O)<sub>2</sub>R, -S(O)<sub>2</sub>NR, -S(O)R, -OP(O)O<sub>2</sub>RR, -P(O)O<sub>2</sub>RR, -C(O)OR, -NRR, -NRRR, -NC(O)R, -C(O)R, -C(O)NRR, -CN, -O and -OR, wherein R is independently selected from the group consisting of -H, alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group.

2. The compound of claim 1 wherein  $Y_1$  is taken together with  $R_1$  or  $R_{11}$  and is  $C_2$  or  $C_3$

- 25 alkylene or alkylene independently substituted with one or more  $Z_1$ , or  $Y_2$  is taken together with  $R_1$  or  $R_{11}$  and is  $C_2$  or  $C_3$  alkylene or alkylene independently substituted with one or more  $Z_1$ , or  $Y_3$  is taken together with  $R_4$  or  $R_5$  or  $R_6$  or  $R_{13}$  and is  $C_2$  or  $C_3$  alkylene or alkylene independently substituted with one or more  $Z_1$ , or  $Y_4$  is taken together with  $R_4$  or  $R_5$  or  $R_6$  or  $R_{13}$  and is  $C_2$  or  $C_3$  alkylene or alkylene independently substituted with one or more  $Z_1$ .

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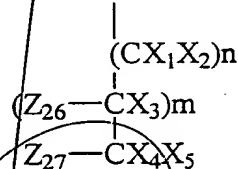
3. The compound of claim 2 wherein the  $C_2$  or  $C_3$  substituted alkylene is gem disubstituted with  $C_1$  to  $C_3$  alkyl.

4. The compound of **claim 3** wherein the C<sub>2</sub> or C<sub>3</sub> substituted alkyleneo is gem disubstituted with methyl.

5       5. The compound of **claim 1** wherein R<sub>8</sub> is alkyl independently substituted with one or more substituents selected from the group consisting of halogen, -C(O)R, and -S(O)<sub>2</sub>R wherein R is independently selected from the group consisting of -OH, O-alkyl, -NH<sub>2</sub>, N-alkyl and linking group.

10       6. The compound of **claim 1** wherein R<sub>8</sub> is -CF<sub>3</sub>.

7. The compound of **claim 1** wherein R<sub>8</sub> is



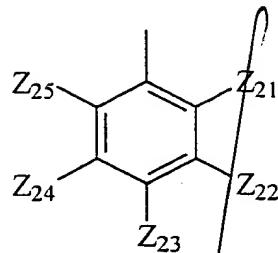
15       wherein Z<sub>26</sub> and Z<sub>27</sub> are each independently selected from the group consisting of hydrogen, -OS(O)<sub>2</sub>OR, -S(O)<sub>2</sub>OR, -S(O)<sub>2</sub>R, -S(O)<sub>2</sub>NR, -S(O)R, -OP(O)O<sub>2</sub>RR, -P(O)O<sub>2</sub>RR, -C(O)OR, -NRR, -NRRR, -NC(O)R, -C(O)R, -C(O)NRR, -NC(O)R, R, and -OR, wherein R is independently selected from the group consisting of -H, alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, and X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub>, and X<sub>5</sub>, are each 20 independently selected from the group consisting of hydrogen, -Cl, -Br and -F, wherein n and m are integers each independently ranging from 0 to 5.

8. The compound of **claim 7** wherein X<sub>1</sub> and X<sub>2</sub> are -H.

25       9. The compound of **claim 7** wherein X<sub>1</sub>, X<sub>2</sub>, X<sub>4</sub>, and X<sub>5</sub> are each -F.

10. The compound of **claim 1** wherein R<sub>8</sub> is aryl or aryl independently substituted with one or more Z<sub>1</sub>.

11. The compound of **claim 1** wherein R<sub>8</sub> has the structure



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wherein Z<sub>21</sub>, Z<sub>22</sub>, Z<sub>23</sub>, Z<sub>24</sub> and Z<sub>25</sub> each taken separately are Z<sub>1</sub>.

10        12. The compound of **claim 11** wherein Z<sub>21</sub>, Z<sub>22</sub>, Z<sub>23</sub>, Z<sub>24</sub> and Z<sub>25</sub> are each independently selected from the group consisting of -H, halogen, C<sub>1</sub> to C<sub>3</sub> alkyl, -C(O)OR, -C(O)R, -S(O)<sub>2</sub>OR, -S(O)<sub>2</sub>R, and -CH<sub>2</sub>OR, wherein R is independently selected from the group consisting of -H, alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group.

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13. The compound of **claim 11** wherein one or more of Z<sub>21</sub>, Z<sub>22</sub>, Z<sub>23</sub>, Z<sub>24</sub> or Z<sub>25</sub> is -Cl or -F.

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14. The compound of **claim 11** wherein Z<sub>21</sub> is -C(O)OH.

15. The compound of **claim 11** wherein Z<sub>21</sub> is -C(O)OH and one of Z<sub>23</sub> or Z<sub>24</sub> is -C(O)OH.

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16. The compound of **claim 11** wherein Z<sub>22</sub> and Z<sub>25</sub> are each -Cl.

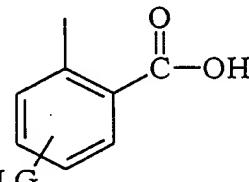
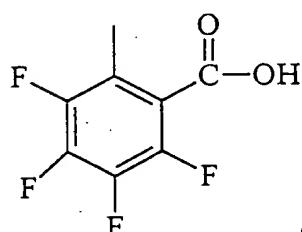
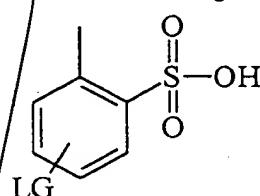
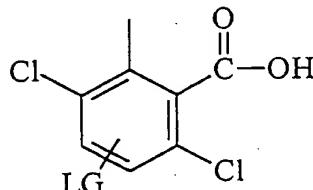
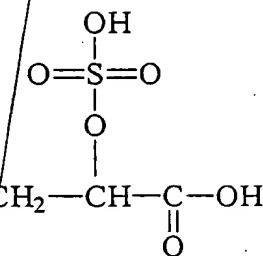
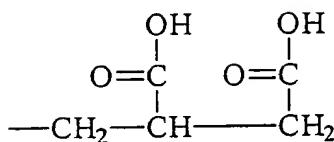
17. The compound of **claim 11** wherein Z<sub>22</sub>, Z<sub>23</sub>, Z<sub>24</sub> and Z<sub>25</sub> are each -F.

30

18. The compound of **claim 11** wherein Z<sub>21</sub> is -S(O)<sub>2</sub>OH and one of Z<sub>23</sub> or Z<sub>24</sub> is -C(O)OH.

19. The compound of **claim 11** wherein Z<sub>21</sub> is -C(O)OR and one of Z<sub>22</sub>, Z<sub>23</sub>, or Z<sub>24</sub> is linking group.

20. The compound of **claim 1** wherein R<sub>8</sub> is selected from the group consisting of



wherein LG is linking group.

21. The compound of **claim 1** wherein at least one of Y<sub>1</sub>, Y<sub>2</sub>, Y<sub>3</sub>, or Y<sub>4</sub> taken separately is selected from the group consisting of -H, alkyl, aryl and arylalkyl.

22. The compound of **claim 1** wherein one or more of R<sub>1</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>9</sub>, R<sub>10</sub>, R<sub>11</sub> and R<sub>13</sub> is each independently -S(O)<sub>2</sub>OH.

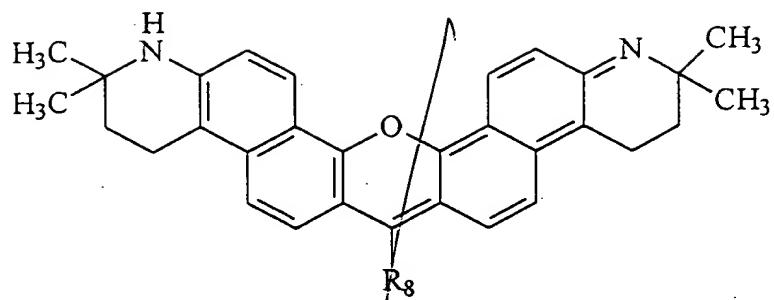
25

23. The compound of **claim 1** wherein one or more of R<sub>1</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>9</sub>, R<sub>10</sub>, R<sub>11</sub> and R<sub>13</sub> are each independently -F or -Cl.

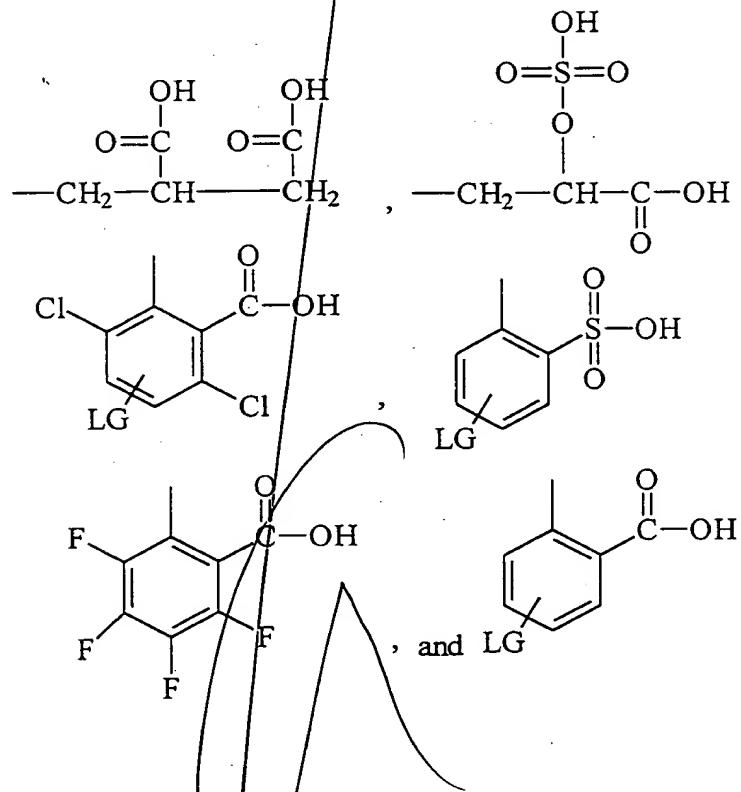
24. The compound of **claim 1** wherein one or more of R<sub>1</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>9</sub>, R<sub>10</sub>, R<sub>11</sub> and R<sub>13</sub> is each independently aryl or aryl independently substituted with one or more Z<sub>1</sub>.

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25. The compound of **claim 1** having the structure

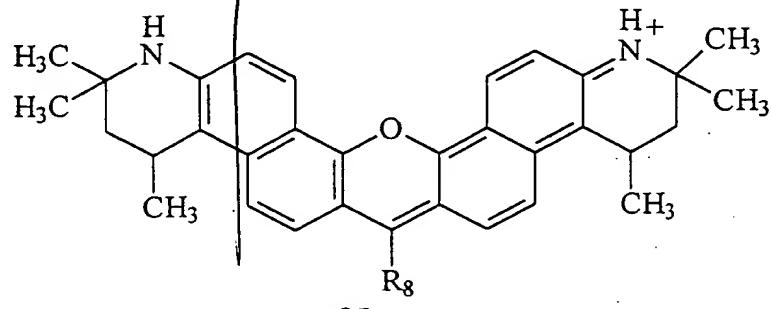


wherein R<sub>8</sub> is selected from the group consisting of

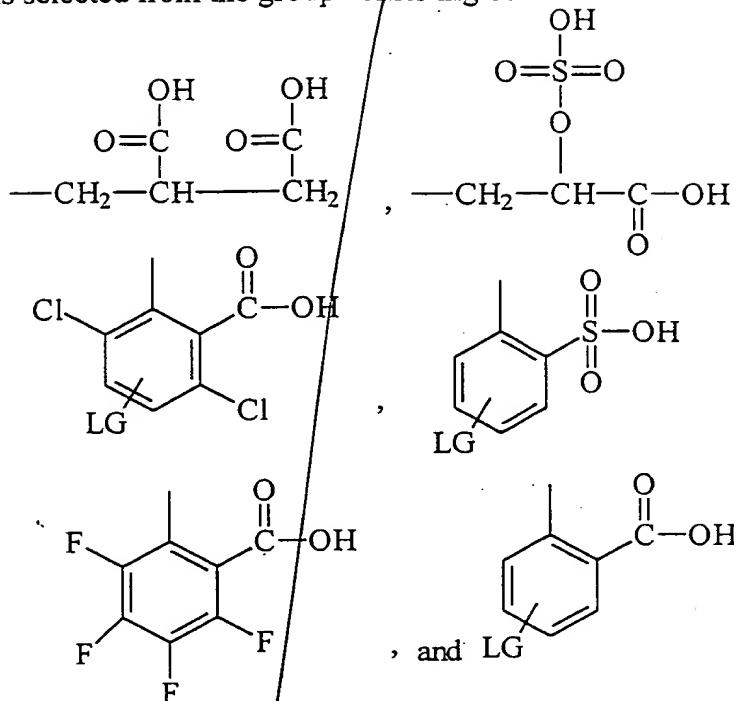


wherein LG is linking group.

26. The compound of claim 1 having the structure

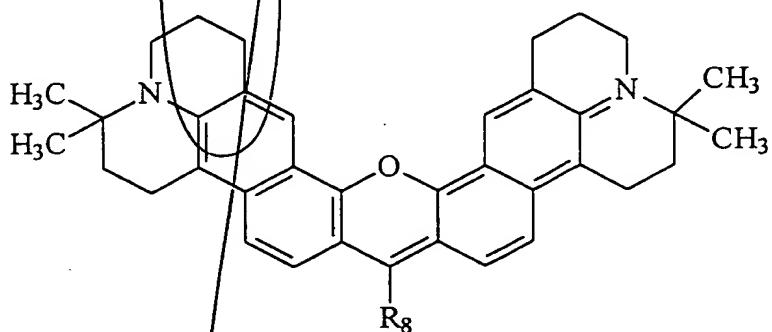


wherein R<sub>8</sub> is selected from the group consisting of



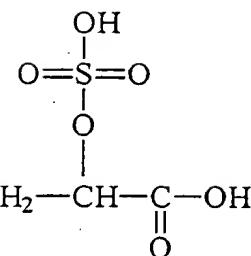
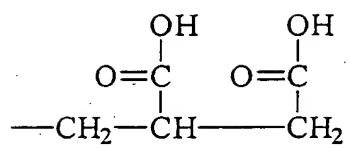
wherein LG is linking group.

27. The compound of **claim 1** having the structure

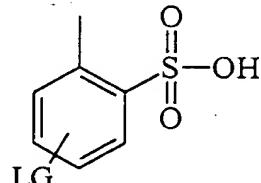
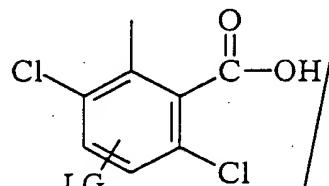


wherein R<sub>8</sub> is selected from the group consisting of

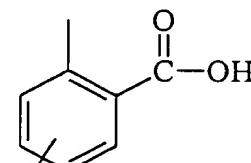
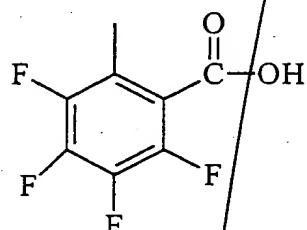
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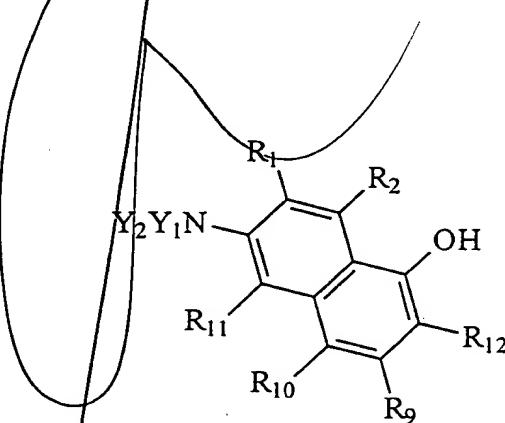


, and LG

wherein LG is linking group.

20

28. An intermediate useful for the synthesis of extended rhodamine compounds having the structure



wherein

25

$R_1$  taken alone is selected from the group consisting of -H, alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted

with one or more  $Z_1$ , heteroarylalkyl, heteroarylalkyl independently substituted with one or more  $Z_1$ , halogen,  $-OS(O)_2OR$ ,  $-S(O)_2OR$ ,  $-S(O)_2R$ ,  $-S(O)_2NR$ ,  $-S(O)R$ ,  $-OP(O)O_2RR$ ,  $-P(O)O_2RR$ ,  $-C(O)OR$ ,  $-NRR$ ,  $-NRRR$ ,  $-NC(O)R$ ,  $-C(O)R$ ,  $-C(O)NRR$ ,  $-CN$ , and  $-OR$ , wherein R is independently selected from the group consisting of  $-H$ , alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or,  $R_1$  taken together with  $R_2$ ,  $Y_1$ , or  $Y_2$  is selected from the group consisting of alkyleneo, alkyleneo independently substituted with one or more  $Z_1$ , heteroalkyleneo, heteroalkyleneo independently substituted with one or more  $Z_1$ , aryleneo, aryleneo independently substituted with one or more  $Z_1$ , heteroaryleneo, and heteroaryleneo independently substituted with one or more  $Z_1$ ;

$R_2$  taken alone is selected from the group consisting of  $-H$ , alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, heteroarylalkyl independently substituted with one or more  $Z_1$ , halogen,  $-OS(O)_2OR$ ,  $-S(O)_2OR$ ,  $-S(O)_2R$ ,  $-S(O)_2NR$ ,  $-S(O)R$ ,  $-OP(O)O_2RR$ ,  $-P(O)O_2RR$ ,  $-C(O)OR$ ,  $-NRR$ ,  $-NRRR$ ,  $-NC(O)R$ ,  $-C(O)R$ ,  $-C(O)NRR$ ,  $-CN$ , and  $-OR$ , wherein R is independently selected from the group consisting of  $-H$ , alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or,  $R_2$  taken together with  $R_1$  is selected from the group consisting of alkyleneo, alkyleneo independently substituted with one or more  $Z_1$ , heteroalkyleneo, heteroalkyleneo independently substituted with one or more  $Z_1$ , aryleneo, aryleneo independently substituted with one or more  $Z_1$ , heteroaryleneo, and heteroaryleneo independently substituted with one or more  $Z_1$ ;

$R_8$  is selected from the group consisting of  $-H$ , alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, heteroarylalkyl independently substituted with one or more  $Z_1$ ;

$R_9$  taken alone is selected from the group consisting of  $-H$ , alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, heteroarylalkyl independently substituted with one or

more  $Z_1$ , halogen,  $-OS(O)_2OR$ ,  $-S(O)_2OR$ ,  $-S(O)_2R$ ,  $-S(O)R$ ,  $-OP(O)O_2RR$ ,  $-P(O)O_2RR$ ,  $-C(O)OR$ ,  $-NRR$ ,  $-NRRR$ ,  $-NC(O)R$ ,  $-C(O)R$ ,  $-C(O)NRR$ ,  $-CN$ , and  $-OR$ , wherein R is independently selected from the group consisting of  $-H$ , alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or,  $R_9$  taken together with  $R_{10}$  is 5 selected from the group consisting of alkylene, alkylene independently substituted with one or more  $Z_1$ , heteroalkylene, heteroalkylene independently substituted with one or more  $Z_1$ , arylene, arylene independently substituted with one or more  $Z_1$ , heteroarylene, and heteroarylene independently substituted with one or more  $Z_1$ ;

$R_{10}$  taken alone is selected from the group consisting of  $-H$ , alkyl, alkyl

10 independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, heteroarylalkyl independently substituted with one or more  $Z_1$ , halogen,  $-OS(O)_2OR$ ,  $-S(O)_2OR$ ,  $-S(O)_2R$ ,  $-S(O)_2NR$ ,  $-S(O)R$ ,  $-OP(O)O_2RR$ ,  $-P(O)O_2RR$ ,  $-C(O)OR$ ,  $-NRR$ ,  $-NRRR$ ,  $-NC(O)R$ ,  $-C(O)R$ ,  $-C(O)NRR$ ,  $-CN$ , and  $-OR$ , wherein R is independently selected from the group consisting of  $-H$ , alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or,  $R_{10}$  taken together with  $R_9$  or  $R_{11}$  is selected from the group consisting of alkylene, alkylene independently substituted with one or more  $Z_1$ , heteroalkylene, heteroalkylene independently substituted with one or more  $Z_1$ , arylene, arylene independently substituted with one or more  $Z_1$ , heteroarylene, and heteroarylene independently substituted with one or more  $Z_1$ ;

$R_{11}$  taken alone is selected from the group consisting of  $-H$ , alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl

25 independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, heteroarylalkyl independently substituted with one or more  $Z_1$ , halogen,  $-OS(O)_2OR$ ,  $-S(O)_2OR$ ,  $-S(O)_2R$ ,  $-S(O)_2NR$ ,  $-S(O)R$ ,  $-OP(O)O_2RR$ ,  $-P(O)O_2RR$ ,  $-C(O)OR$ ,  $-NRR$ ,  $-NRRR$ ,  $-NC(O)R$ ,  $-C(O)R$ ,  $-C(O)NRR$ ,  $-CN$ , and  $-OR$ , wherein R is independently selected from the group consisting of  $-H$ , alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking group, or,  $R_{11}$  taken together with  $R_{10}$ ,  $Y_1$  or  $Y_2$  is selected from the group consisting of alkylene, alkylene independently substituted with one or more  $Z_1$ , heteroalkylene, heteroalkylene independently substituted with one or more  $Z_1$ ,

aryleno, arylene independently substituted with one or more  $Z_1$ , heteroaryleno, and heteroaryleno independently substituted with one or more  $Z_1$ ;

$R_{12}$  is selected from the group consisting of -H and  $-C(O)R_8$ ;

$Y_1$  taken alone is selected from the group consisting of -H, alkyl, alkyl independently

- 5 substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, and heteroarylalkyl independently substituted with one or more  $Z_1$ , or  $Y_1$  taken together with  $R_1$ ,  $R_{11}$  or  $Y_2$  is selected from the group consisting of  
10 alkylene, alkylene independently substituted with one or more  $Z_1$ , heteroalkylene,  
heteroalkylene independently substituted with one or more  $Z_1$ , arylene, arylene independently substituted with one or more  $Z_1$ , heteroarylene, and heteroarylene independently substituted with one or more  $Z_1$ ;

- 15  $Y_2$  taken alone is selected from the group consisting of -H, alkyl, alkyl independently substituted with one or more  $Z_1$ , heteroalkyl, heteroalkyl independently substituted with one or more  $Z_1$ , aryl, aryl independently substituted with one or more  $Z_1$ , heteroaryl, heteroaryl independently substituted with one or more  $Z_1$ , arylalkyl, arylalkyl independently substituted with one or more  $Z_1$ , heteroarylalkyl, and heteroarylalkyl independently substituted with one or more  $Z_1$ , or  $Y_2$  taken together with  $R_1$ ,  $R_{11}$  or  $Y_1$  is selected from the group consisting of  
20 alkylene, alkylene independently substituted with one or more  $Z_1$ , heteroalkylene,  
heteroalkylene independently substituted with one or more  $Z_1$ , arylene, arylene independently substituted with one or more  $Z_1$ , heteroarylene, and heteroarylene independently substituted with one or more  $Z_1$ ; and

- 25  $Z_1$  is selected from the group consisting of, -R, halogen,  $-OS(O)_2OR$ ,  $-S(O)_2OR$ , -  
 $S(O)_2R$ ,  $-S(O)_2NR$ ,  $-S(O)R$ ,  $-OP(O)O_2RR$ ,  $-P(O)O_2RR$ ,  $-C(O)OR$ ,  $-NRR$ ,  $-NRRR$ ,  $-NC(O)R$ , -  
 $C(O)R$ ,  $-C(O)NRR$ ,  $-CN$ ,  $-O$  and  $-OR$ , wherein R is independently selected from the group  
consisting of -H, alkyl, heteroalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl and linking  
group.

- 30 29. The compound of **claim 28** wherein  $Y_1$  is taken together with  $R_1$  or  $R_{11}$  and is  $C_2$  or  
 $C_3$  alkylene or alkylene independently substituted with one or more  $Z_1$ , or  $Y_2$  is taken together

with R<sub>1</sub> or R<sub>11</sub> and is C<sub>2</sub> or C<sub>3</sub> alkylene or alkylene independently substituted with one or more Z<sub>1</sub>.

30. The compound of **claim 29** wherein the C<sub>2</sub> or C<sub>3</sub> substituted alkylene is gem  
5 disubstituted with C<sub>1</sub> to C<sub>3</sub> alkyl.

31. The compound of **claim 30** wherein the C<sub>2</sub> or C<sub>3</sub> substituted alkylene is gem  
disubstituted with methyl.

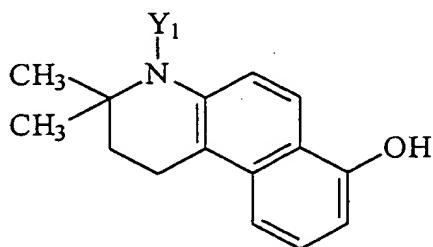
10 32. The compound of **claim 28** wherein at least one of Y<sub>1</sub> or Y<sub>2</sub> taken separately is  
selected from the group consisting of -H, alkyl, aryl and arylalkyl.

15 33. The compound of **claim 28** wherein one or more of R<sub>1</sub>, R<sub>2</sub>, R<sub>9</sub>, R<sub>10</sub> and R<sub>11</sub> is each  
independently -S(O)<sub>2</sub>OH.

34. The compound of **claim 28** wherein one or more of R<sub>1</sub>, R<sub>2</sub>, R<sub>9</sub>, R<sub>10</sub> and R<sub>11</sub> is each  
independently -F or -Cl.

20 35. The compound of **claim 28** wherein one or more of R<sub>1</sub>, R<sub>2</sub>, R<sub>9</sub>, R<sub>10</sub> and R<sub>11</sub> is each  
independently aryl or aryl independently substituted with one or more Z<sub>1</sub>.

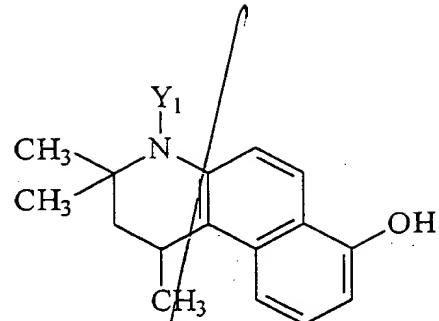
36. The compound of **claim 28** having the structure



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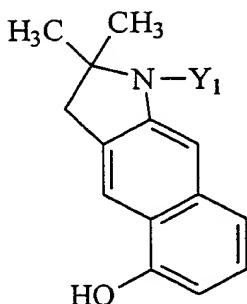
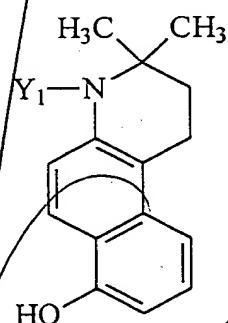
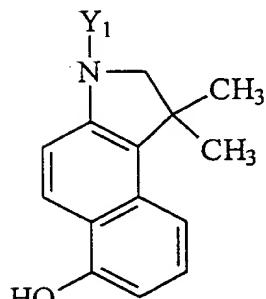
37. The compound of **claim 28** having the structure

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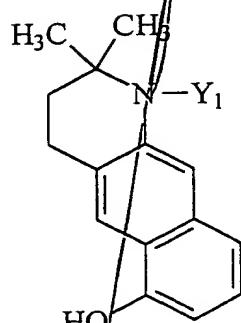


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38. The compound of claim 28 which is selected from the group consisting of



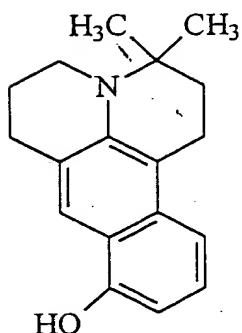
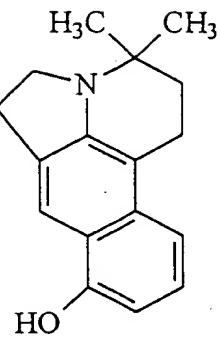
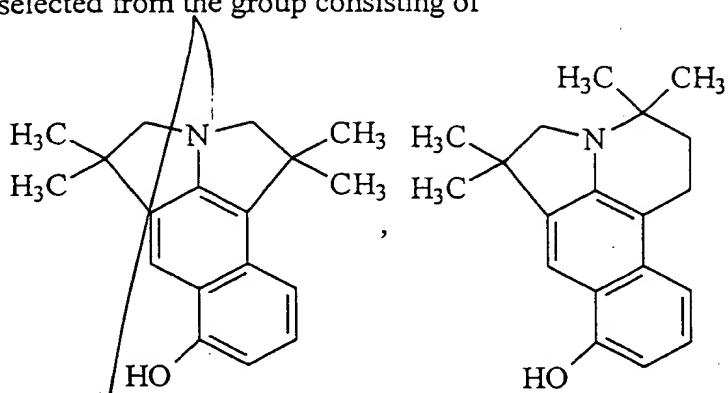
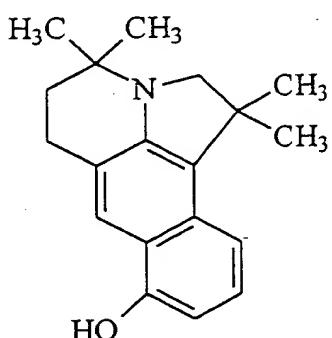
20 and



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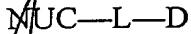
39. The compound of claim 28 selected from the group consisting of



and ,

15

40. A labeled nucleoside/tide having the formula:



20 wherein

NUC is a nucleoside/tide or nucleoside/tide analog;

L is a linkage;

D is an extended rhodamine dye compound of claim 1;

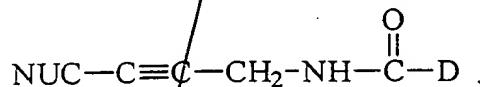
25 wherein if NUC comprises a purine base, the linkage is attached to the 8-position of the purine, if NUC comprises a 7-deazapurine base, the linkage is attached to the 7-position of the 7-deazapurine, and if NUC comprises a pyrimidine base, the linkage is attached to the 5-position of the pyrimidine.

30 41. The labeled nucleoside/tide of claim 40 wherein NUC comprises a base selected from the group consisting of uracil, cytosine, deazaadenine, and deazaguanosine.

42. The labeled nucleoside/tide of claim 40 wherein NUC is a nucleotide terminator compound.

43. The labeled nucleoside/tide of claim 40 having the structure

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44. A method of fragment analysis comprising the steps of:

10 forming one or more labeled polynucleotide fragments, the fragments being labeled with an extended rhodamine compound of claim 1;

resolving the one or more labeled polynucleotide fragments; and  
detecting the resolved labeled polynucleotide fragments.

15  
45. The method of claim 44 wherein the resolving step is an electrophoretic size-  
dependent separation process and the one or more labeled polynucleotide fragments are  
detected by fluorescence.

20  
JUL 1963